

Varun G Poojary

Software Engineer

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PROFESSIONAL SUMMARY

Software Engineer with 3+ years of experience building backend systems in Python, including REST APIs with FastAPI, database-backed services, and AI model integration for real-time industrial platforms. Experienced with AWS EC2 deployments, Docker containerization, CI/CD build automation, real-time C++ data pipelines, and MQTT-based device communication, with working knowledge of NumPy, Pandas, SQL, and LLM fundamentals. Strong foundation in microservices, distributed systems, and Linux-based development. Currently leading development of the OTA firmware update system as lead engineer for a team of 6 engineers and independently delivered the organization's 5G private network as the sole engineer on the project.

TECHNICAL SKILLS

Backend	FastAPI • REST APIs • WebSocket • MTConnect
Languages	Python 3 • C++ • C • Bash
Other	5G / Magma Core • AI/ML Integration • LLM Fundamentals (exposure) • Agile/Scrum • Git
IoT / Comms	MQTT • Industrial IoT • Edge Computing • OTA
Databases	MongoDB • Time-Series Data • Redis (exposure)
Data Processing	NumPy • Pandas • SQL (basic)
DevOps	AWS EC2 • Docker • Kubernetes • CI/CD • GitHub Actions • CMake • Conan • Make • Prometheus, Grafana, ELK Stack (exposure)
Systems	Linux • Multithreading • Microservices • Distributed Systems

WORK EXPERIENCE

Software Engineer | Enterprise Minds Inc.

June 2023 – Present

Industrial IoT – Monitoring & Control Platform

May 2024 – Present

Tech Stack: C, C++, Python, FastAPI, MQTT, MongoDB, MTConnect, Docker, Microservices, REST APIs, CMake, Conan, Make, Bash, Git, Linux

- Designed and developed a Python/FastAPI REST API service backed by MongoDB, enabling CRUD operations and real-time querying of machine telemetry; optimized aggregation queries that cut average read latency by 40%.
- Developed a predictive maintenance module that integrated AI/ML models with real-time machine telemetry to flag anomalies before equipment failure, reducing unplanned downtime.
- Reduced post-processing time for time-series metrics by over 60% by pre-computing interval-to-slot mappings and batching summarization calls across devices instead of per-device sequential processing.
- Containerized all services using Docker and orchestrated deployments across AWS EC2 and on-premises environments, reducing deployment time by ~70%.
- Automated build pipelines with CMake, Conan, and Bash scripting; maintained versioned releases via Git with structured branching.
- Built a real-time C++ data acquisition pipeline that interfaces with industrial PLCs via MTConnect, achieving sustained throughput of thousands of data points per second with sub-100ms latency.

- Architected an MQTT-based pub/sub communication layer for distributed industrial systems, achieving 99.9%+ uptime across cloud and on-premises deployments.
- Initiated and led development of a secure OTA (Over-The-Air) firmware update framework using RAUC as lead developer for the C++ agent software, guiding a team of 6 engineers; enabled zero-downtime remote updates across edge devices in the field.
- Built a device management platform capable of tracking and controlling hundreds of edge devices, including health monitoring, remote configuration, and lifecycle management.

5G Private Network R&D (Magma Core)

November 2023 – April 2024

Tech Stack: 5G, C, C++, Magma Core, Microservices, Docker, Kubernetes, REST APIs, Networking, Prometheus, Grafana, ELK Stack

- As the sole engineer on the initiative, deployed a fully functional 5G private network from scratch within the organization using the open-source Magma Core platform, integrating multiple User Equipment (UE) devices for end-to-end validation.
- Conducted systematic functional and performance testing across network layers, identifying and documenting protocol-level behaviors to validate network stability and throughput.
- Designed and maintained detailed technical documentation, including setup guides, test procedures, and architecture overviews, enabling repeatable deployment by other team members.
- Worked with containerized microservice deployments (Docker, Kubernetes) to stand up and manage Magma network components in a controlled lab environment.
- Used Prometheus, Grafana, and the ELK Stack to monitor network components and logs during testing, gaining hands-on exposure to observability tooling.

EDUCATION

Bachelor of Engineering (B.E.) – Canara Engineering College, Bantwal	2023
Pre-University (PCM) – S.V.S PU College, Bantwal	2019
SSLC – S.V.S English Medium School, Bantwal	2017

AREAS OF EXPERTISE

Backend Development (Python / FastAPI) • Microservices Architecture • Predictive Maintenance & Industrial AI • MongoDB & Time-Series Data • AWS EC2 Deployments • Docker & Containerized Deployments • Distributed Systems & Cloud-Edge Architecture • Monitoring & Control Systems • Industrial IoT & Edge Computing • C++ Systems Programming • MQTT & Real-Time Communication • Embedded Linux Development • OTA Update Infrastructure & Team Leadership • Device Management Platforms • MTConnect Integration • 5G / Magma Core